

# Belfast Sewers Project News



## Tunnel Breakthrough a Milestone for Belfast Sewers Project

Regional Development Minister, Conor Murphy, MP, MLA, welcomed a major milestone for the £100 million Belfast Sewers Project in late April.



Nearly a mile long and 40 metres below ground, a key section of Belfast's deepest tunnel was completed as the tunnel boring machine (TBM) made its breakthrough at Duncrue Street. Capable of holding vast overflows of stormwater - up to four million gallons - it will reduce the risk of sewer flooding in the greater Belfast area.

Speaking on site, Minister Murphy commented, "The breakthrough is a key milestone in this vital project. The scheme represents a commitment to providing Belfast with a sewerage network that has been designed by the highest industry standards to last well in to the 21st Century. This system

will accommodate the expanding city and its drainage needs, significantly reducing the risk of flooding and reducing the risk of pollution to the River Lagan."

This section of tunnel is the longest completed stretch of the Belfast Sewers Project, which when finished will comprise of a 6 mile tunnel from Cromac Street to Duncrue Street, with a network of tributary tunnels. The project is one of the biggest civil engineering infrastructure projects in the UK.

Bill Gowdy, NI Water said: "Today represents another landmark in our

journey to a modern and effective sewerage system for Belfast. NI Water has a massive programme of water and wastewater infrastructure investment underway. This involves an investment of a million pounds every working day in schemes which will benefit homes and businesses. I am delighted that we are well on track to bring such large scale benefits to the city."

The NI Water scheme will provide the greater Belfast area with a modern sewerage system by 2009 to replace a 19th century sewer network which can no longer cope with the needs of the expanding city.



TOP LEFT: Members of the Belfast Sewers Project team with the Tunnel Boring Machine.

ABOVE: Regional Development Minister Conor Murphy arrives at Duncrue Street for the breakthrough.



Name:  
Paul Ronnicke

Position:  
Joint Venture  
Project Manager

## GroundView

Q1. Describe your role in the Belfast Sewers Project?

I am the JV project manager. It is my job to ensure physical construction and delivery of the project, which means making sure that we have the right people and processes in place to manage it. I lead a very large team of staff and operatives to ensure that the constraints of construction time, cost and quality are met. We have brought together on this project a number of key people with experience in what is required for this project. In this modern age of skills shortages we have had to look long and hard for the right people and they've come from a range of countries including NI, Eire, mainland UK, France, Germany, Poland, Libya and Nigeria

Q2. What is your career background?

I am a chartered mining engineer and a chartered civil engineer and my entire working life has been associated with underground construction, from mining developments, deep shafts, storage caverns, hydro-electric schemes. But of more relevance is that over the last 10 years I have mostly worked on about 25km of tunnels in glacial deposits with

caissons, EPB and slurry Tunnel Boring Machines. Previously I have worked on the Fylde Coast scheme which was very similar to the Belfast Sewers project – 12km of tunnel and caissons in glacial deposits – and the Hull Urban Wastewater Project – 10km of tunnel in glacial deposits with a marine outfall.

Q3. What are the unique challenges at this stage of the project?

There are a number of technical challenges posed by the ground conditions on this project. Belfast is built on an area of complex glacial and fluvio-glacial deposits and these are highly variable and need some complex solutions. Ask yourself why there are so few tunnels in NI.

Q4. How is the project an example of best practice?

We like to think that we bring a safety culture with us, and an environmental awareness. We have recently won a Considerate Constructors Award, which is based on many factors including raising the standards of site management, safety and environmental awareness. Also the scale of the project allows us to use some advanced techniques – major system formwork for the Terminal Pumping Station civil works, sprayed concrete shell techniques for excavations in clay and rock, and Earth Pressure Balance tunnelling methods.

Q5. How will the Project help Belfast?

It is yet another infrastructure project which sets the scene for continued economic development of the city and an improvement to its living conditions

and environment. By reducing the flooding risk the scheme offers an incentive for investment and growth as well as enhancing the citizens lifestyle.

Q6. What has surprised you about working in Belfast?

The warmth of the people in this region. Belfast has had an adverse press for many years and the reality is a friendly and integrated society with an eagerness to move forward.



Q7. What element of your role (or of the project) do you find most satisfying?

For me its overall delivery. I have a passion for programme and delivering to a date, and delivering a project to the client's satisfaction. I would never like to believe that we left a project without the client being completely satisfied with the end result.

LEFT: Developments at the Site of Terminal Pumping Station

ABOVE: The 4 metre high tunnel from Whitla Street to Duncrue Street is now complete.





# Sharing expertise

Realising an ambitious project such as the Belfast Sewers Project requires the sharing of skills, knowledge and experiences with the international community. Each element of construction yields new challenges to be overcome and new lessons to be learned.

With guidance from experts across the globe, the Belfast Sewers Project has become a leading international example of best practice. We are delighted to continue the tradition of sharing new experiences and recently

welcomed Kunji Akinaga from Nihon Suido, working on behalf of the Japanese Ministry of Health Labour and Welfare.

During his visit to the UK, Kunji met

with several water companies and regulators to discuss a number of different options for the provision of water and sewerage services'

LEFT: Project Sponsor Bill Gowdy and Kunji Akinaga discuss the complexity of the scheme

## Project takes silver for considerate practice

Northern Ireland Water's Joint Venture contractor, Morgan Est Farrans, has scooped a prestigious Considerate Constructors Award in recognition of their work on the Belfast Sewers Project.

A benchmark of industry standards, the award acknowledges the efforts made to ensure that the project did not unduly affect the lives of local residents and businesses.

Bill Gowdy, Northern Ireland Water Project Sponsor said:

**"The project team is thrilled to be recognised as a Considerate Constructor by our industry peers. From the initial phase of the project Morgan Est Farrans adopted an extremely proactive approach. Meetings were arranged with the local communities to explain the extent of the work, ensure inconvenience to**



**daily life was minimal and that access to businesses was always maintained.**

Mr Gowdy also said that: **"Morgan Est Farrans have clearly demonstrated that they are a 'Considerate Constructor' and thoroughly deserve this award. On behalf of the whole**

**project team and Northern Ireland Water, I would like to congratulate the Morgan Est Farrans team."**

RIGHT: Members of the joint venture contractor Morgan-Est Farrans team and Christine McKenna, NI Water (2nd left) at the high profile Award Ceremony



## Industry Experts Gain Inside View Of The Tunnel

Industry professionals were given a detailed inside view of the Belfast Sewers Project during a recent visit.

President of the Institution of Civil Engineers (ICE), David Orr accompanied by Mark Lowry, Chairman of ICE Northern Ireland along with other delegates were taken on a tour of the Project which included a visit down the new Belfast Sewer tunnel and a visit to the construction site for the Terminal Pumping Station.

Commenting on the project, David Orr President of the ICE said:

**"I am greatly impressed by the challenge NIW has undertaken with this project. It is clear from the visit that NIW are making excellent progress with their partners Morgan Est Farrans in delivering a world class service for the people of Belfast."**

## Arrival of second Tunnel boring machine

The Belfast Sewers Project took another giant step forward in March as the second Tunnel Boring Machine (TBM) arrived in the city. Designed to excavate a 2.5m high tunnel, this TBM is much smaller than its 4m high goliath counterpart which recently completed operations on the project.

Designed and constructed by engineering specialists LOVAT, the TBMs are purpose built to ensure that large scale, complex tunnelling schemes are delivered swiftly, accurately and safely. In contrast to other tunnelling techniques such as drilling and blasting, a TBM has the advantages of not disturbing surrounding soil and produces a smooth tunnel wall, making

them suitable to use in built-up areas. The very first boring machine ever reported to have been built was Henri-Joseph Maus's Mountain Slicer in 1845. It was commissioned by the King of Sarinda to dig the Fréjus Rail Tunnel. Since then, TBMs have become a fundamental component in many large scale infrastructure programmes across the globe.



If you would like more information about the project please contact:

**Waterline: 08457 440088**  
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northern ireland  
**water**